Operator's Manual

Ride-On Trowel

CRT 36-24A
CRT 36-25

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Translated instructions

This Operator's Manual presents the original instructions. The original language of this Operator's Manual is American English.

Foreword

Machines covered by this manual

Machine	Item Number	Machine	Item Number
CRT 36-24A	0620080	CRT 36-25	0620115
CRT 36-24A	0620299	CRT 36-25	0620295
CRT 36-24A	0620801	CRT 36-25	0620803
CRT 36-24A	0620802	CRT 36-25	0620804

Machine documentation

- Keep a copy of the Operator's Manual with the machine at all times.
- Use the separate Parts Book supplied with the machine to order replacement parts.
- Refer to the separate Repair Manual for detailed instructions on servicing and repairing the machine.
- If you are missing any of these documents, please contact Wacker Neuson Corporation to order a replacement or visit www.wackerneuson.com.
- When ordering parts or requesting service information, be prepared to provide the machine model number, item number, revision number, and serial number.

Expectations for information in this manual

- This manual provides information and procedures to safely operate and maintain the above Wacker Neuson model(s). For your own safety and to reduce the risk of injury, carefully read, understand, and observe all instructions described in this manual.
- Wacker Neuson Corporation expressly reserves the right to make technical modifications, even without notice, which improve the performance or safety standards of its machines.
- The information contained in this manual is based on machines manufactured up until the time of publication. Wacker Neuson Corporation reserves the right to change any portion of this information without notice.

CALIFORNIA Proposition 65 Warning

Engine exhaust, some of its constituents, and certain vehicle components, contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Laws pertaining to spark arresters

NOTICE: State Health Safety Codes and Public Resources Codes specify that in certain locations spark arresters be used on internal combustion engines that use hydrocarbon fuels. A spark arrester is a device designed to prevent accidental discharge of sparks or flames from the engine exhaust. Spark arresters are qualified and rated by the United States Forest Service for this purpose. In order to comply with local laws regarding spark arresters, consult the engine distributor or the local Health and Safety Administrator.

Manufacturer's approval

This manual contains references to *approved* parts, attachments, and modifications. The following definitions apply:

- **Approved parts or attachments** are those either manufactured or provided by Wacker Neuson.

- **Approved modifications** are those performed by an authorized Wacker Neuson service center according to written instructions published by Wacker Neuson.
- **Unapproved parts, attachments, and modifications** are those that do not meet the approved criteria.

Unapproved parts, attachments, or modifications may have the following consequences:

- Serious injury hazards to the operator and persons in the work area
- Permanent damage to the machine which will not be covered under warranty

Contact your Wacker Neuson dealer immediately if you have questions about approved or unapproved parts, attachments, or modifications.

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1 Safety Information

1.1 Signal Words Found in this Manual

This is the safety alert symbol. It is used to alert you to potential personal hazards.

- Obey all safety messages that follow this symbol.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

- To avoid death or serious injury from this type of hazard, obey all safety messages that follow this signal word.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

- To avoid possible death or serious injury from this type of hazard, obey all safety messages that follow this signal word.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

- To avoid possible minor or moderate injury from this type of hazard, obey all safety messages that follow this signal word.

NOTICE: Used without the safety alert symbol, NOTICE indicates a situation which, if not avoided, could result in property damage.

Note: *A Note contains additional information important to a procedure.*

1.2 Machine Description and Intended Use

This machine is a ride-on concrete finishing trowel. The Wacker Neuson Ride-On Trowel consists of a frame onto which are mounted a gasoline or diesel engine, a fuel tank, a water tank, two gearboxes joined by a drive shaft, and an operator's platform with controls and a seat. A set of metal blades is connected to each gearbox. A ring guard surrounds the blades. The engine rotates the blades via the gearboxes and a clutch mechanism. The rotating blades ride on the surface of curing concrete, creating a smooth finish. The operator, who sits on the operator's platform, uses the controls and the throttle pedal to control speed and direction of the machine.

This machine is intended to be used for floating and burnishing curing concrete.

This machine has been designed and built strictly for the intended use described above. Using the machine for any other purpose could permanently damage the machine or seriously injure the operator or other persons in the area. Machine damage caused by misuse is not covered under warranty.

The following are some examples of misuse:

- Using the machine as a ladder, support, or work surface
- Using the machine to carry or transport passengers or equipment
- Using the machine to finish inappropriate materials such as slurries, sealers, or epoxy finishes
- Operating the machine outside of factory specifications
- Operating the machine in a manner inconsistent with all warnings found on the machine and in the Operator's Manual

This machine has been designed and built in accordance with the latest global safety standards. It has been carefully engineered to eliminate hazards as far as practicable and to increase operator safety through protective guards and labeling. However, some risks may remain even after protective measures have been taken. They are called residual risks. On this machine, they may include exposure to:

- Heat, noise, exhaust, and carbon monoxide from the engine
- Chemical burns from the curing concrete
- Fire hazards from improper refueling techniques
- Fuel and its fumes, fuel spillage from improper lifting technique
- Personal injury from improper lifting techniques
- Cutting hazards from sharp or worn blades

To protect yourself and others, make sure you thoroughly read and understand the safety information presented in this manual before operating the machine.

1.3 Operating Safety

WARNING

Familiarity and proper training are required for the safe operation of the machine. Machines operated improperly or by untrained personnel can be hazardous. Read the operating instructions contained in this manual and the engine manual, and familiarize yourself with the location and proper use of all controls. Inexperienced operators should receive instruction from someone familiar with the machine before being allowed to operate it.

1.3.1 Operator qualifications

Only trained personnel are permitted to start, operate, and shut down the machine. They also must meet the following qualifications:

- have received instruction on how to properly use the machine
- are familiar with required safety devices

The machine must not be accessed or operated by:

- children
- people impaired by alcohol or drugs

1.3.2 Never operate this machine in applications for which it is not intended.

1.3.3 Do not allow anyone to operate this equipment without proper training. People operating this equipment must be familiar with the risks and hazards associated with it.

1.3.4 Do not touch the engine or muffler while the engine is on or immediately after it has been turned off. These areas get hot and may cause burns.

1.3.5 Do not operate the machine with unapproved accessories or attachments.

1.3.6 NEVER operate the machine with the beltguard missing. Exposed drive belt and pulleys create potentially dangerous hazards that can cause serious injuries.

1.3.7 Never leave the machine running unattended.

1.3.8 Do not run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Engine exhaust contains carbon monoxide. This is a poison you cannot see or smell. Exposure to carbon monoxide can cause loss of consciousness and CAN KILL YOU IN MINUTES.

1.3.9 ALWAYS remain aware of moving parts and keep hands, feet, and loose clothing away from the moving parts of the machine.

1.3.10 Always wear protective clothing appropriate to the job site when operating the machine.

1.3.11 Read, understand, and follow procedures in the Operator's Manual before attempting to operate the machine.

1.3.12 Be sure operator is familiar with proper safety precautions and operation techniques before using machine.

1.3.13 Close fuel valve on engines equipped with one when machine is not being operated.

1.3.14 Store the machine properly when it is not being used. The machine should be stored in a clean, dry location out of the reach of children.

1.3.15 Always operate the machine with all safety devices and guards in place and in working order.

1.3.16 Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while operating this machine:

- Close-fitting work clothes that do not hinder movement
- Safety glasses with side shields
- Hearing protection
- Safety-toed footwear

1.4 Operator Safety while using Internal Combustion Engines

WARNING
Internal combustion engines present special hazards during operation and fueling.
Failure to follow the warnings and safety standards could result in severe injury or death.

- ▶ Read and follow the warning instructions in the engine owner's manual and the safety guidelines below.

DANGER
Exhaust gas from the engine contains carbon monoxide, a deadly poison.
Exposure to carbon monoxide can kill you in minutes.

- ▶ NEVER operate the machine inside an enclosed area, such as a tunnel, unless adequate ventilation is provided through such items as exhaust fans or hoses.

Operating safety

When running the engine:

- Keep the area around exhaust pipe free of flammable materials.
- Check the fuel lines and the fuel tank for leaks and cracks before starting the engine. Do not run the machine if fuel leaks are present or the fuel lines are loose.

When running the engine:

- Do not smoke while operating the machine.
- Do not run the engine near sparks or open flames.
- Do not touch the engine or muffler while the engine is running or immediately after it has been turned off.
- Do not operate a machine when its fuel cap is loose or missing.
- Do not start the engine if fuel has spilled or a fuel odor is present. Move the machine away from the spill and wipe the machine dry before starting.

Refueling safety

When refueling the engine:

- Clean up any spilled fuel immediately.
- Refill the fuel tank in a well-ventilated area.
- Replace the fuel tank cap after refueling.
- Do not smoke.
- Do not refuel a hot or running engine.
- Do not refuel the engine near sparks or open flames.

- Do not refuel if the machine is positioned in a truck fitted with a plastic bed liner. Static electricity can ignite the fuel or fuel vapors.

1.5 Service Safety

WARNING

A poorly maintained machine can become a safety hazard! In order for the machine to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

1.5.1 Service training

Before servicing or maintaining the machine:

- Read and understand the instructions contained in all manuals delivered with the machine.
- Familiarize yourself with the location and proper use of all controls and safety devices.
- Only trained personnel shall troubleshoot or repair problems occurring with the machine.
- Contact Wacker Neuson Corporation for additional training if necessary.

When servicing or maintaining this machine:

- Do not allow improperly trained people to service or maintain the machine. Personnel servicing or maintaining the machine must be familiar with the associated potential risks and hazards.

1.5.2 Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while servicing or maintaining this machine:

- Close-fitting work clothes that do not hinder movement
- Safety glasses with side shields
- Hearing protection
- Safety-toed footwear

In addition, before servicing or maintaining the machine:

- Tie back long hair.
- Remove all jewelry (including rings).

1.5.3 Do not attempt to clean or service the machine while it is running. Rotating parts can cause severe injury.

1.5.4 Do not crank a flooded engine with the spark plug removed on gasoline-powered engines. Fuel trapped in the cylinder will squirt out the spark plug opening.

1.5.5 Do not test for spark on gasoline-powered engines if the engine is flooded or the smell of gasoline is present. A stray spark could ignite the fumes.

1.5.6 Do not use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.

1.5.7 ALWAYS turn engine off and remove key from machine before performing maintenance or making repairs.

1.5.8 ALWAYS handle blades carefully. The blades can develop sharp edges which can cause serious cuts.

1.5.9 Keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.

1.5.10 When replacement parts are required for this machine, use only Wacker Neuson replacement parts or those parts equivalent to the original in all types of specifications, such as physical dimensions, type, strength, and material.

1.5.11 Disconnect the spark plug on machines equipped with gasoline engines, before servicing, to avoid accidental start-up.

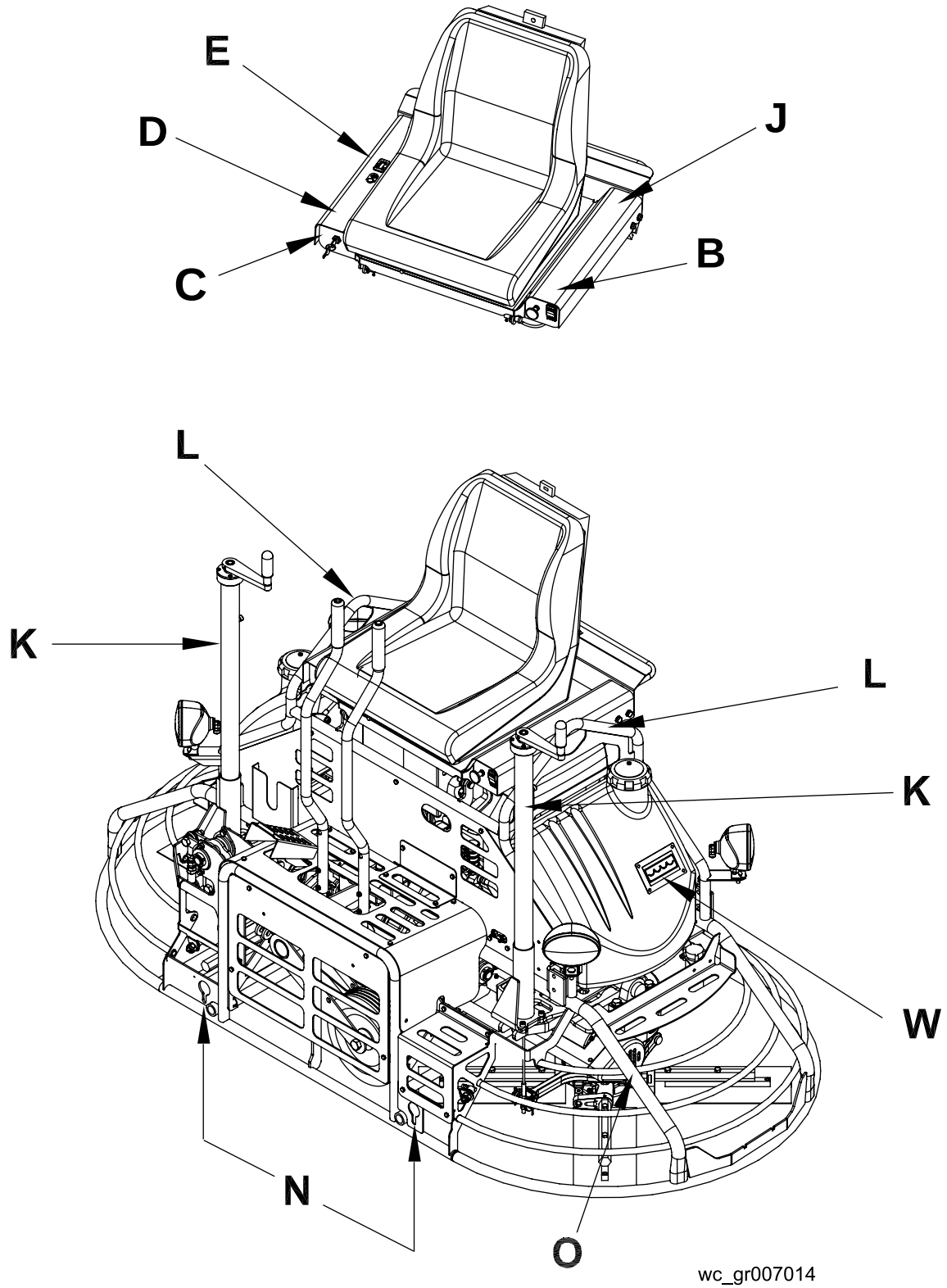
1.5.12 ALWAYS switch off the power supply at the battery disconnect before adjusting or maintaining the electrical equipment.

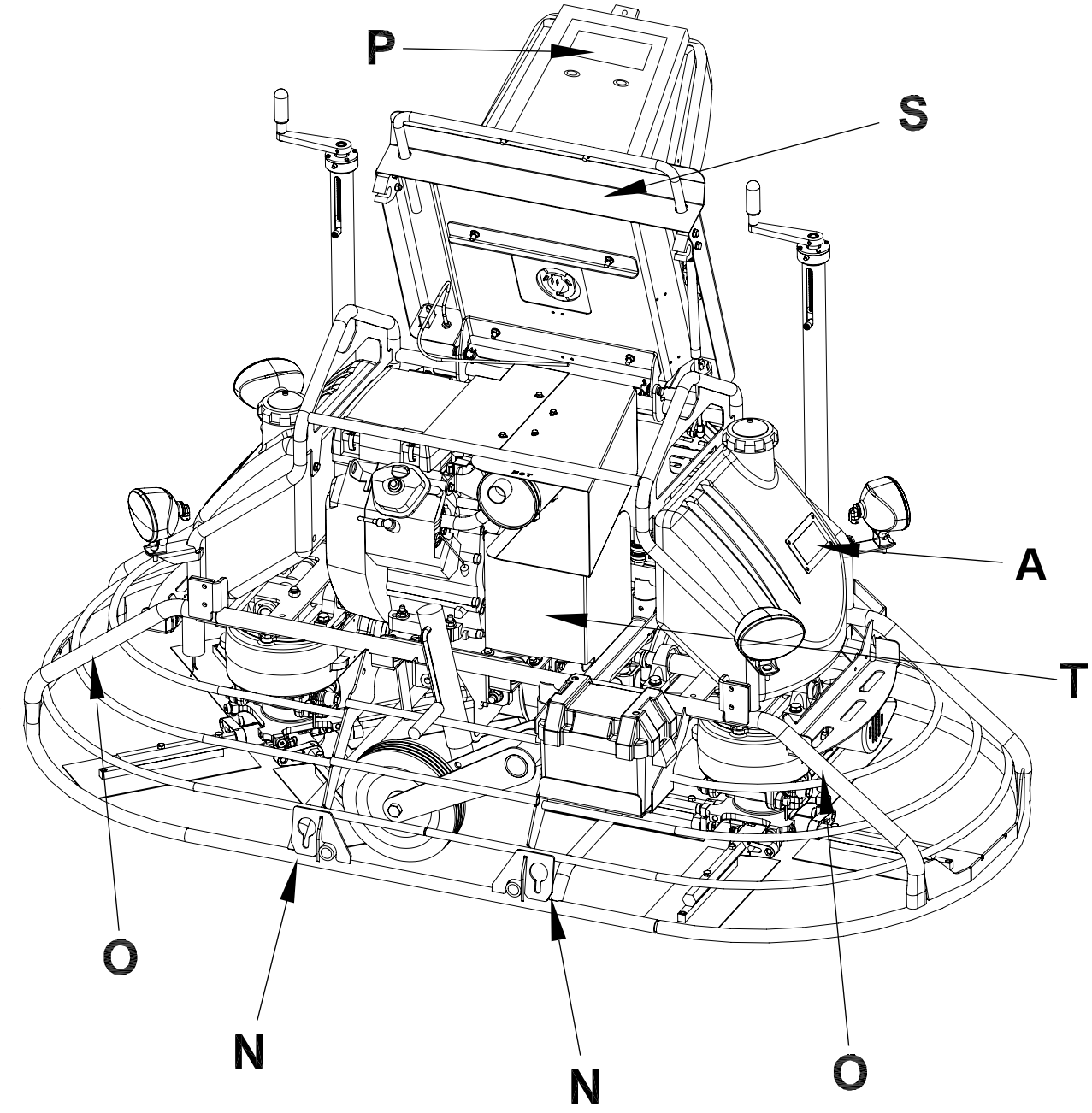
1.5.13 Keep the machine clean and labels legible. Replace all missing and hard-to-read labels. Labels provide important operating instructions and warn of dangers and hazards.

Notes

2 Labels

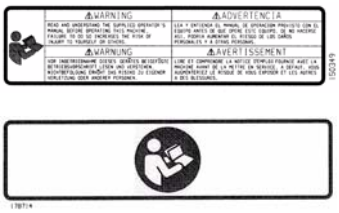
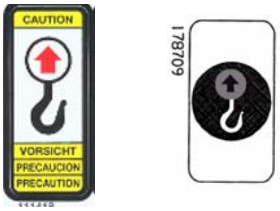
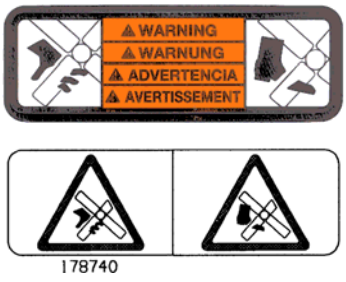
2.1 Label Locations





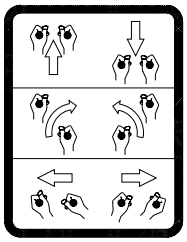
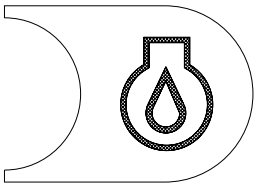
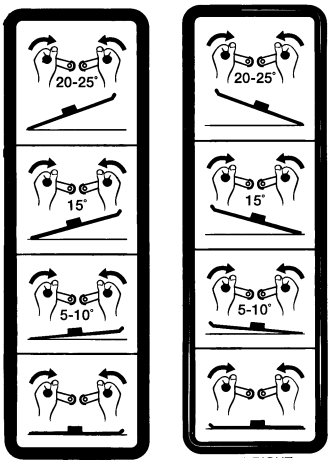
wc_gr007015

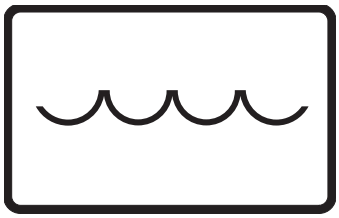
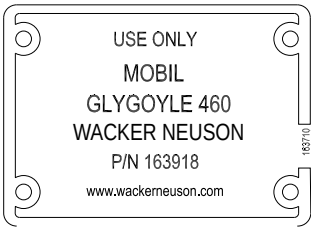
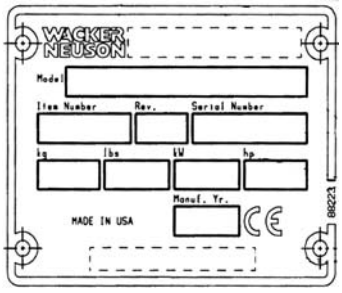
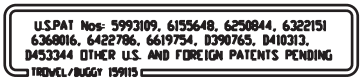
2.2 Safety Labels

Ref.	Label	Meaning
A		DANGER! Asphyxiation hazard. ▪ Engines emit carbon monoxide. ▪ Do not run the machine indoors or in an enclosed area unless adequate ventilation, through such items as exhaust fans or hoses, is provided. ▪ Read the Operator's Manual. ▪ No sparks, flames, or burning objects near the machine. ▪ Stop the engine before refueling.
B		WARNING! To reduce the risk of hearing loss and eye injury, always wear hearing protection and eye protection when operating this machine.
J		WARNING! Read and understand the supplied Operator's Manual before operating the machine. Failure to do so increases the risk of injury to yourself and others.
L		CAUTION Lifting point.
O		WARNING! Cutting hazard. Keep hands and feet away from moving blade.

Ref.	Label	Meaning
S	178713	WARNING! Hot surface!
T	178712	WARNING! Entanglement hazard. Keep hands away from spinning belt and pulley.
--		WARNING! Remove pan from trowel before lifting machine overhead. Pans can fall and cause death or serious injury if a person is hit. (Label located on top side of float pan.)

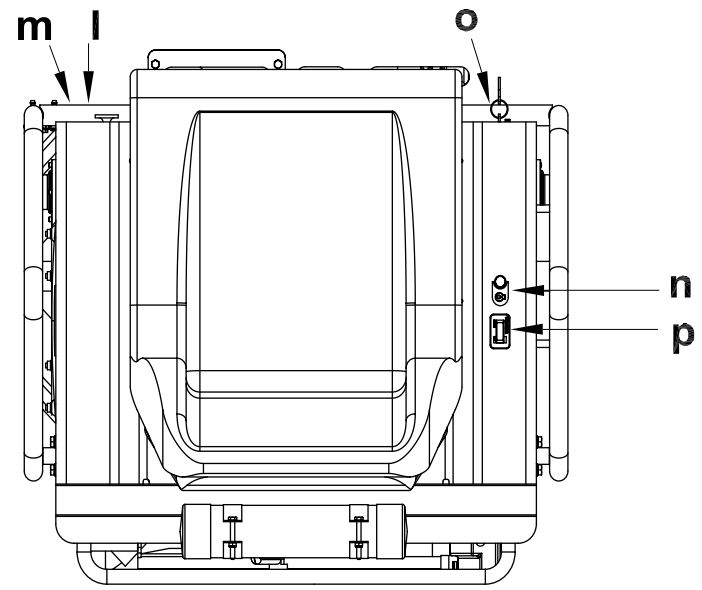
2.3 Informational Labels

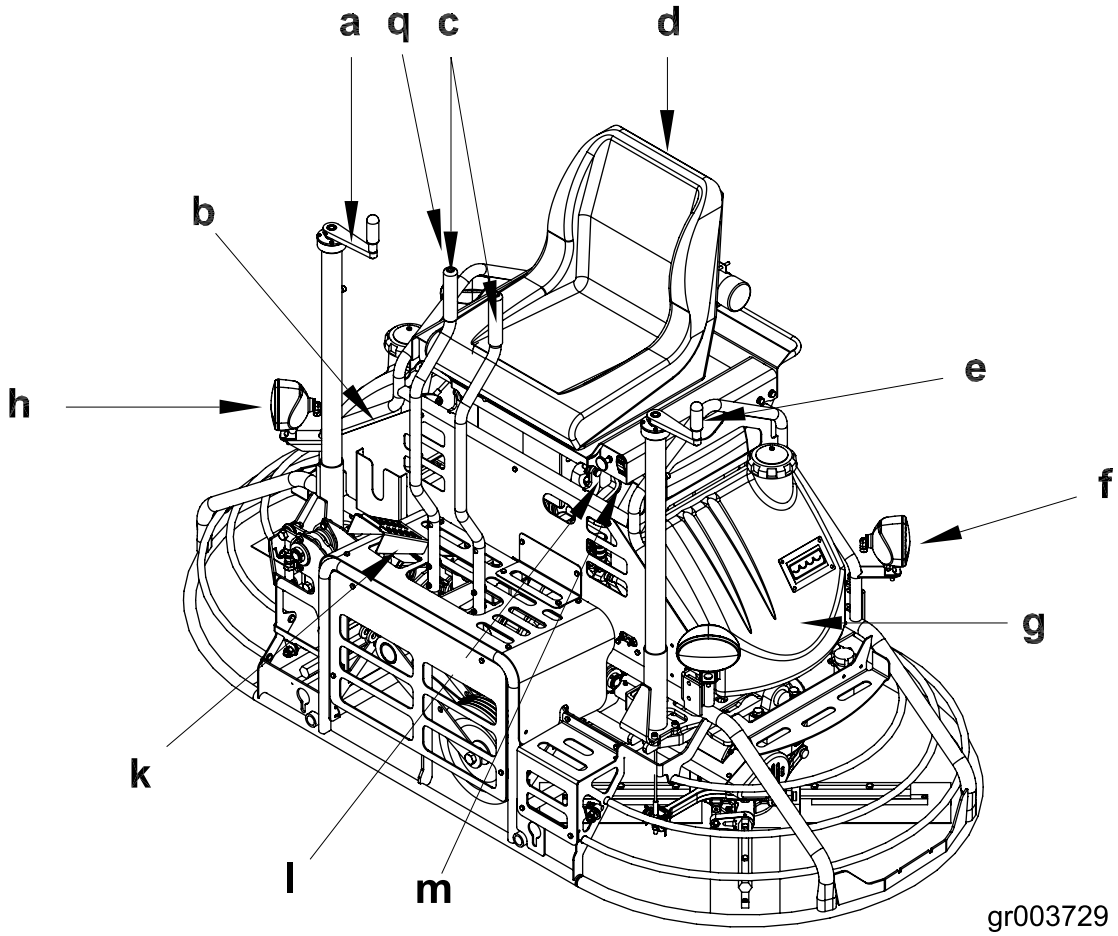
Ref.	Label	Meaning
C		Positions of the key switch: ■ ON ■ OFF ■ Engine crank
D		Steering control: ■ Push both levers forward to move forward ■ Pull both levers backward to move rearward ■ Push the left lever forward and pull the right lever backward to rotate clockwise ■ Pull the left lever backward and push the right lever forward to rotate counterclockwise ■ Move both levers to the left to move left ■ Move both levers to the right to move right
E		Check engine oil level.
K		Pitch control: To increase pitch: Rotate the left pitch control clockwise, rotate the right pitch control counterclockwise. To decrease pitch: Rotate the left pitch control counterclockwise, rotate the right pitch control clockwise
N		Tie-down point.

Ref.	Label	Meaning
P		Operator's Manual must be stored on machine. Replacement Operator's Manual can be ordered through your local Wacker Neuson distributor.
W	 173438	Water tank fill. Use only clean water or water-based retardants.
--		Use **only** Glygoyle 460 gear oil in gearbox.
--		A nameplate listing the model number, item number, revision number, and serial number is attached to each unit. Please record the information found on this plate so it will be available should the nameplate become lost or damaged. When ordering parts or requesting service information, you will always be asked to specify the model number, item number, revision number, and serial number of the unit.
--		This machine may be covered by one or more patents.

3 Operation

3.1 Features and Controls





Control locations and functions:

Ref.	Description	Ref.	Description
a	Right pitch control	k	Foot pedal (throttle control)
b	Fuel tank	l	Engine choke control
c	Control arms	m	Work light switch
d	Operator's seat with "operator presence" switch	n	Oil pressure indicator light
e	Left pitch control	o	Engine keyswitch
f	Rear work light (one each side)	p	Hour meter
g	Water tank	q	Water spray control
h	Work light (one each side)	—	—

The Ride-On Trowel features a seat with an integrated "operator presence" system, which works in conjunction with a throttle mounted switch. This system allows the engine to remain running (idling) with no operator seated in the seat, as long as the throttle is not depressed. This system meets all safety requirements and eliminates the need for a foot-operated "kill switch".

To familiarize a new operator with the Ride-On Trowel the following steps should be taken:

3.1.1 With the operator in the seat, show him or her the functions of the control arms **(c)** and how to start the machine.

3.1.2 Have the operator practice steering the trowel. A hard concrete slab slightly wetted with water is an ideal place for an operator to practice with the machine. For this practice, pitch the blades up approximately ¼" on the leading edge. Start by making the machine hover in one spot, and then practice driving the machine in a straight line and making 180° turns. The **best control** is achieved at full rpm.

3.2 Position of the Operator

Safe and efficient use of this machine is the operator's responsibility. Full control of the machine is not possible unless the operator maintains the proper working position at all times.

While operating this machine the operator must:

- be seated in the operator's seat facing forward
- have both feet on the control deck
- have both hands on the controls

3.3 Preparing the Machine for First Use

Preparing for first use

To prepare your machine for first use:

3.3.1 Make sure all loose packaging materials have been removed from the machine.

3.3.2 Check the machine and its components for damage. If there is visible damage, do not operate the machine! Contact your Wacker Neuson dealer immediately for assistance.

3.3.3 Take inventory of all items included with the machine and verify that all loose components and fasteners are accounted for.

3.3.4 Attach component parts not already attached.

3.3.5 Add fluids as needed and applicable, including fuel, engine oil, and battery acid.

3.3.6 Move the machine to its operating location.

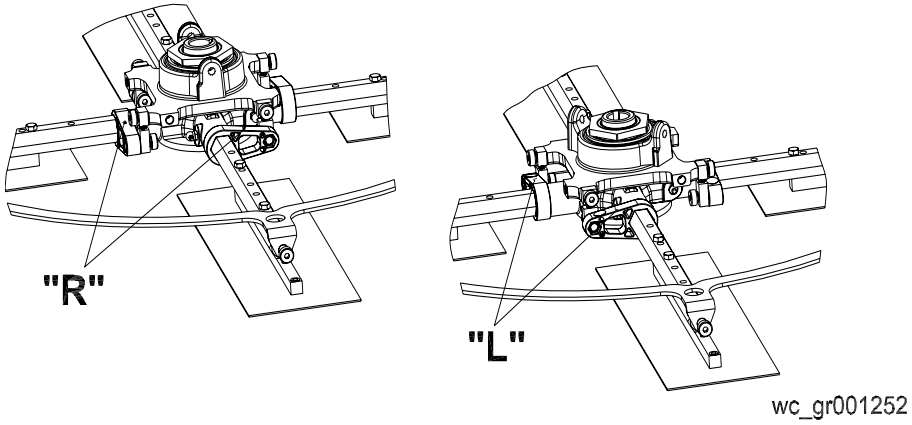
3.4 Break-in Period

See Graphic: wc_gr001252

3.4.1 To break in the gearboxes, run the engine at 50% of full throttle for the first 2–4 hours. This will prevent premature wear and extend gear life.

***NOTICE*:** Running the engine at full throttle during the break-in period could result in premature gear failure.

3.4.2 Verify that the horizontal blade pitch links are properly assembled. When seated on the machine, the right rotor should have an **"R"** designation located towards the upper portion of the pitch link and the left rotor should have an **"L"**.



3.5 Before Starting

Before starting the trowel, check the following:

- fuel level
- oil level in the engine
- condition of the air filter
- condition of trowel arms and blades

Grease the trowel arms daily.

3.6 Starting

Before starting the operator must know the location and function of all controls.

3.6.1 Push down on the throttle foot pedal, turn the engine keyswitch **(o),** and hold it until the engine starts.

Note: I*f the engine is cold, pull out the choke control knob fully. The choke may need to be opened even when starting a warm engine.*

***NOTICE*:** Cranking the engine for more than 5 seconds can cause starter damage. If the engine fails to start, release the keyswitch and wait 10 seconds before operating the starter again.

Note: *The engine has an oil alert light to notify operator if the oil pressure is low. If engine will not start, or stops during operation, check engine oil level.*

3.6.2 Allow the engine to warm up before operating the trowel.

3.7 Stopping

To stop trowel movement, return control levers to their neutral position and release pressure on the throttle foot pedal.

To stop the engine, turn the keyswitch to “O” (off).

3.8 Operation

To utilize your Wacker Neuson Ride-On Trowel to its fullest capacity, the machine should be driven in the direction that the operator is facing. This will finish the widest possible area, while giving the operator an excellent view of the slab surface about to be troweled. When the machine reaches the end of the slab, make a 180° U-turn, and repeat the straight line of direction to the other end of the slab.

Note: *During the break-in period, run the engine at 50% of full throttle. Refer to Section New Machines.*

***NOTICE*: DO NOT** use excessive pressure on the control levers. Excessive pressure does not increase the reaction time of the machine and can damage the steering controls.

***NOTICE*:** Attempting to use the trowel too early in the curing stage of the concrete may result in an undesirable finish. Only experienced concrete finishers should operate the trowel.

3.9 Steering

See Graphic: wc_gr000146

Refer to the illustration for the necessary hand motions to move the trowel in the desired direction, described below.

1 - forward

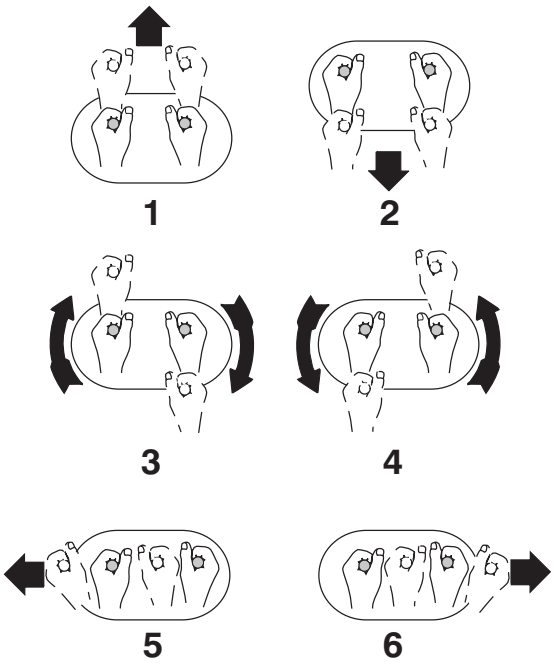
2 - reverse

3 - rotate clockwise

4 - rotate counter-clockwise

5 - left sideways

6 - right sideways



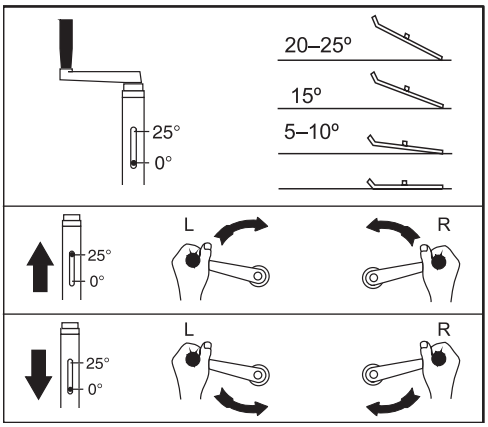
wc_gr000146

3.10 Pitch Adjustment

When changing or setting the pitch (angle) of the trowel blades, slow the machine, set the desired pitch on the left side of the machine, then adjust the right side to match.

To increase pitch: Rotate the left pitch control **(L)** clockwise, rotate the right pitch control **(R)** counterclockwise.

To decrease pitch: Rotate the left pitch control **(L)** counterclockwise, rotate the right pitch control **(R)** clockwise.



wc_gr007019

Working Conditions of Concrete	Suggested Working Pitch
1. Wet surface working stage	Flat (No Pitch)
2. Wet to plastic working stage	Slight Pitch
3. Semi-hard working stage	Additional Pitch
4. Hard finishing stage (burnishing)	Maximum Pitch

3.11 Emergency Shutdown Procedure

Procedure

If a breakdown or accident occurs while the machine is operating, follow the procedure below:

3.11.1 Stop the engine.

3.11.2 Close the fuel valve.

3.11.3 Remove the machine from the job site using the wheel kit.

3.11.4 Clean concrete from the blades and the machine.

3.11.5 Contact the rental yard or machine owner for further instructions.

4 Maintenance

4.1 Periodic Maintenance Schedule

The table below lists basic machine maintenance. Tasks designated with check marks may be performed by the operator. Tasks designated with square bullet points require special training and equipment.
Refer to the engine operator's manual for information on engine maintenance.

	Daily	Every 20 hrs.	Every 50 hrs.	Every 100 hrs.	Every 200 hrs.	Every 300 hrs.
Grease trowel arms.	■					
Check fuel level.	✓					
Check engine oil level.[1]	✓					
Inspect air filter. Replace as needed.	✓					
Check external hardware.	✓					
Pressure wash all surfaces until free of concrete.[2]	■					
Check oil level in gearboxes.		✓				
Grease gearbox, drive system and pitch posts fittings.		■				
Grease control linkage.		■				
Check drive belt for wear.			✓			
Change engine oil.[3]				■		
Check fuel filter.				✓		
Clean and check spark plug.					■	
Replace oil filter.					■	
Replace spark plug.						■
Replace fuel filter.						■
Replace oil in gearboxes.						■

[1] Check engine oil twice daily (every 4 hours).
[2] Pressure wash immediately after use.
[3] Change engine oil after first 20 hours of operation.

4.2 Trowel Gearboxes

See Graphic: wc_gr003730

Check the gearboxes for the correct oil level after every 20 hours of operation. Change the gearbox oil every 300 hours.

To check the oil level:

Each CRT gearbox is equipped with two oil fill plugs. Remove one gearbox oil fill plug **(b)**. If the level is below the threads of the oil fill plug hole, add synthetic gear oil through the opening. DO NOT overfill. Wipe the threads dry on both the gearbox and the oil fill plug, apply Loctite 545 or equivalent to the oil fill plug threads, replace the oil fill plug and torque to 16–20 Nm (12–15 ft.lbs.).

***NOTICE*: DO NOT** mix types of gear oil. **DO NOT** overfill the gearbox with oil. Damage to the gearbox may occur if oils are mixed, or if the gearbox is overfilled. See *Technical Data* for oil quantity and type.

To change gearbox oil:

4.2.1 Place a container of sufficient capacity (approximately 3.8 l [1 gallon]) under each gearbox.

4.2.2 Remove the gearbox oil drain plug **(c)** and allow the oil to drain out. It may be necessary to remove the gearbox oil fill plug(s) to facilitate draining. After most of the oil has drained out, tip the back of the trowel upwards to allow the remaining oil to drain out.

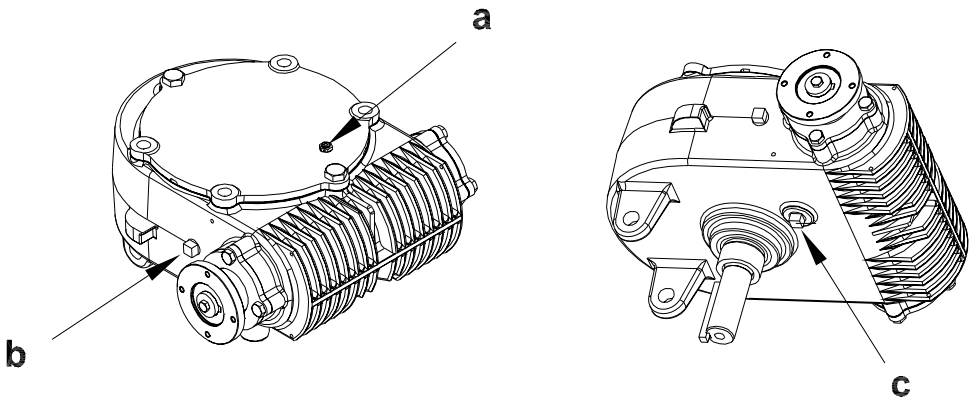
4.2.3 After all the oil has drained out, wipe the threads dry on both the gearbox and the oil drain plug, apply Loctite 545 or equivalent to the oil drain plug threads, and replace the gearbox oil drain plug.

Note: *Dispose of used gear oil in accordance with environmental protection legislation.*

4.2.4 With the trowel level, fill the gearbox with approximately 1.83 l (62 oz.) synthetic gear oil through the oil fill plug as described above.

4.2.5 Wipe the threads dry on both the gearbox and the oil fill plug, apply Loctite 545 or equivalent to the oil fill plug threads, replace the oil fill plug(s), and torque all plugs to 16-20 Nm (12–15 ft.lbs.).

Each gearbox has a pressure relief valve **(a)** which can become clogged over time. Check or replace as needed. Failure to replace the valve can result in oil leakage from the gearbox shaft seals.



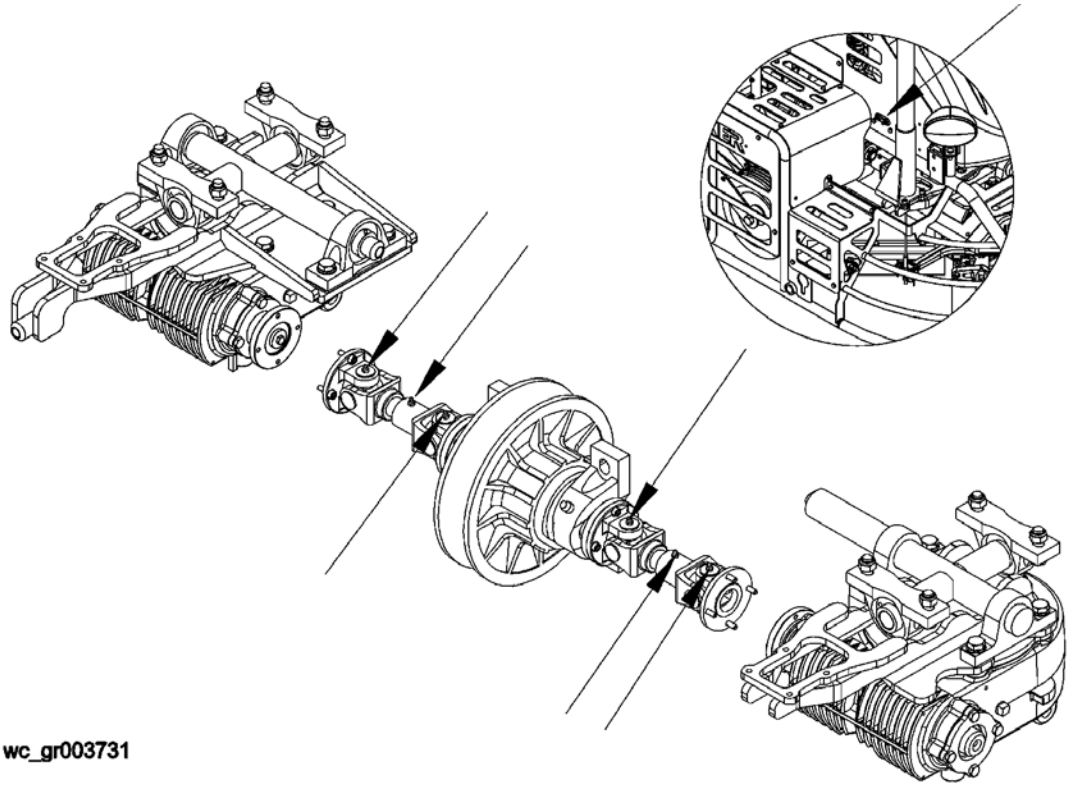
wc_gr003730

4.3 Lubrication

See Graphic: wc_gr003731, wc_gr003732

The drive system, gearbox and pitch posts are equipped with several grease fittings. Grease these fittings once a week, or every 20 hours, to prevent wear.

Use a general purpose grease and add one to two shots of grease at each fitting.



wc_gr003731

4.4 Control Arm Adjustment (Forward or Backward)

See Graphic: wc_gr003732

The control arms should line up evenly. If arms appear out of adjustment, they can be re-adjusted forward or backward as follows:

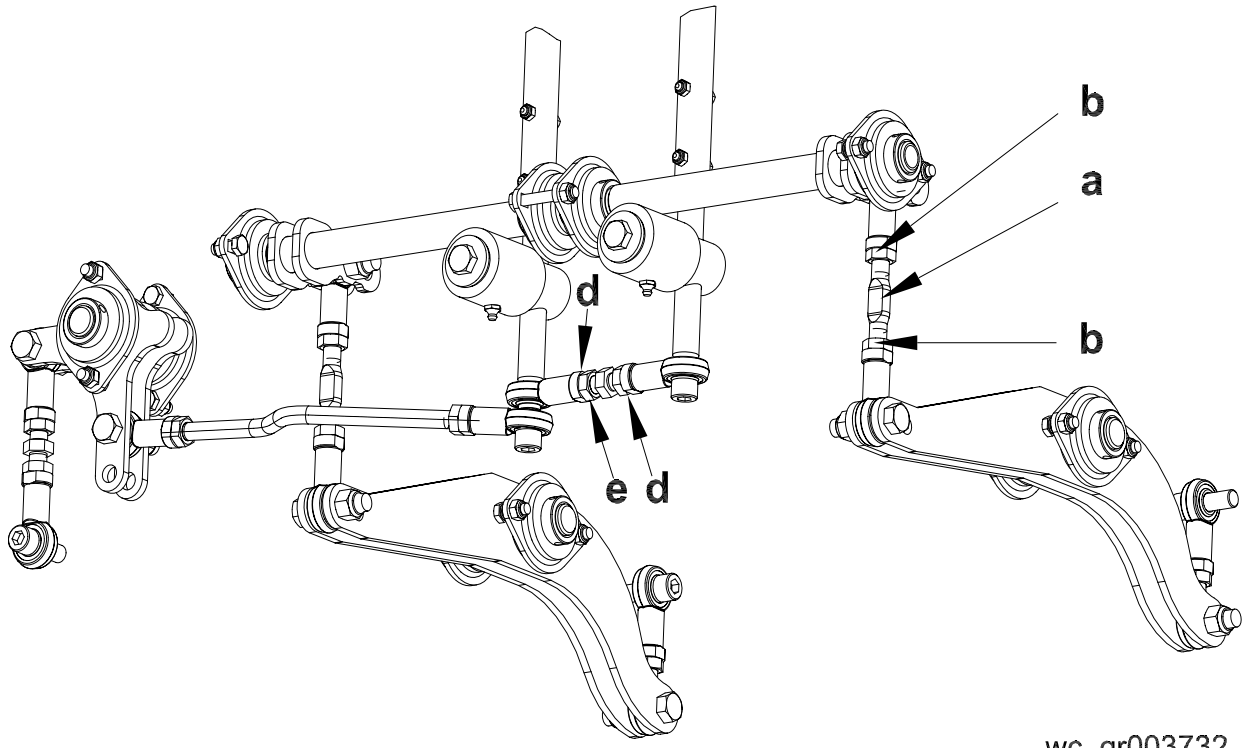
4.4.1 Loosen jam nuts **(b)**.

4.4.2 Turn the vertical linkage **(a)** as follows:

- Extend the linkage to adjust control levers forward. See section 4.5 before extending linkage.
- Shorten the linkage to adjust control levers backward.

4.4.3 After the arms have been adjusted to the desired position, tighten jam nuts **(b)**.

NOTICE: Control arms are adjusted as part of the steering assist system. Changing orientation of the control arms may affect steering effort.



wc_gr003732

4.5 Right-hand Control Arm Adjustment (Right or Left)

See Graphic: wc_gr003732

The arms should be set to be perfectly vertical. Should the arms come out of adjustment, adjust as follows:

4.5.1 Loosen the jam nuts **(d)**.

4.5.2 Drop the horizontal linkage **(e)** down to clear the bracket.

4.5.3 Shorten the linkage to move the control arms to the left.

4.5.4 Extend the linkage to move the control arms to the right.

4.5.5 After the control lever has been adjusted to the desired position, reassemble the nut and the bolt **(c)** and tighten the jam nuts **(d)**.

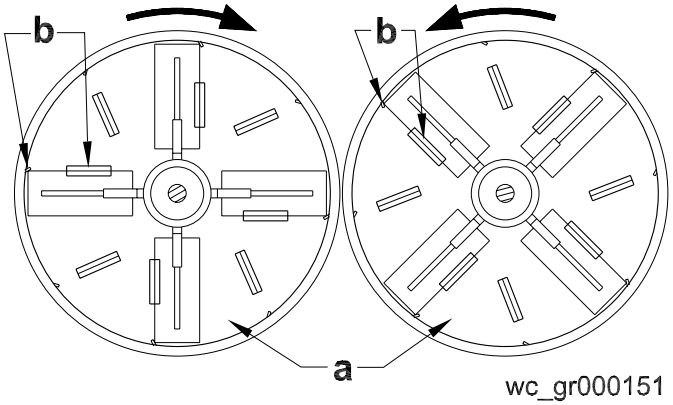
4.6 Mounting Float Pans

See Graphic: wc_gr000151

Certain applications may require the use of float pans. Optional float pans **(a)** are available, and are used with the machines in the non-overlapping configuration only.

To mount float pans:

Lift trowel off the ground **with the engine off** and position the pan against the blades. Turn pan either to the right or left to engage clip angles **(b)** as shown. Remember, the right-hand trowel blades turn counterclockwise; the left-hand blades turn clockwise.



wc_gr000151

4.7 Transporting Trowels

See Graphic: wc_gr003733

WARNING

ALWAYS turn the engine off and remove the key from the machine before moving or transporting machine.

To hoist the trowel:

Attach a sling or chains through the lifting bars **(a)** on each side of the seat pedestal.

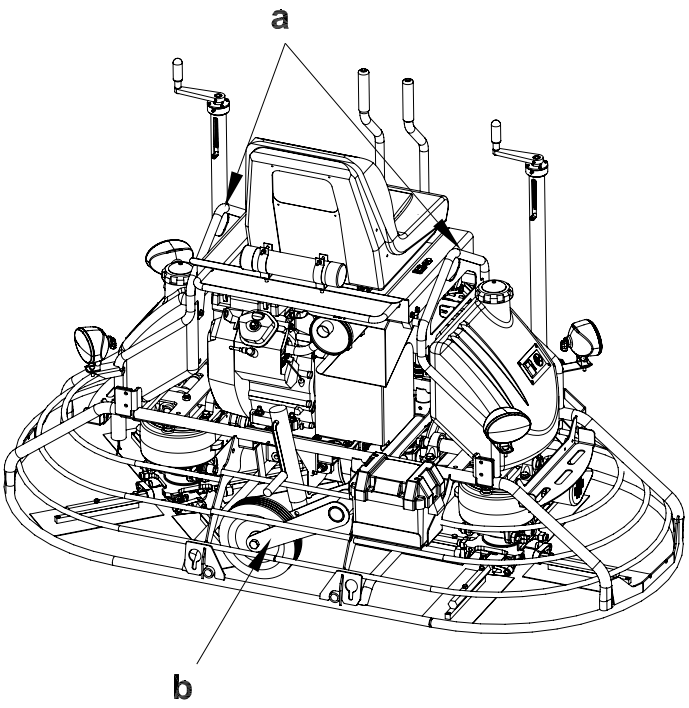
***NOTICE*:** Make sure the lifting device has enough weight-bearing capacity to lift machine safely. Refer to section *Technical Data.*

WARNING

DO NOT lift the trowel by the guard rings or any part of the trowel other than the lifting fixture, as the component may fail, causing the trowel to fall, possibly injuring bystanders.

If equipped with the optional integrated wheel kit (b):

From the rear of machine, use the jack handle to raise the blades off the ground 76-102 mm (3-4 in.). Push the machine using the upper frame.



wc_gr003733

4.8 Drive Belt

See Graphic: wc_gr003734

To replace the drive belt:

4.8.1 Place the trowel on a flat, level surface with the blades pitched flat.

4.8.2 Turn engine off and disconnect battery.

4.8.3 Remove the beltguard.

4.8.4 Remove 2 bolts **(a)**, washers **(b)** and nuts **(c)** from each bearing flange.

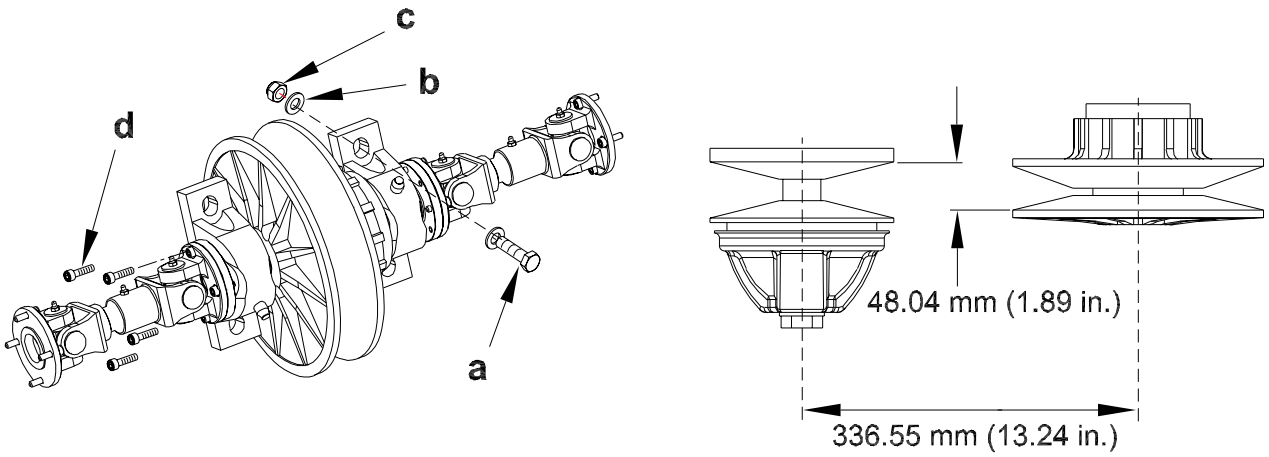
4.8.5 Remove the 4 bolts **(d)** holding each inside universal joint to the shaft fitting. Remove universal joints and shims (if included) from ends of drive shaft.

4.8.6 Lift the drive pulley up far enough to slide belt past.

4.8.7 Remove the old belt and install a new one.

4.8.8 Reverse the procedure for assembly. Align the bearings and shaft as straight as possible. Adjust pulley offset and center distance to values as shown.

4.8.9 Torque the bearing bolts **(a)** to 99±10 ft.lbs. Torque the universal joint bolts **(d)** to 10±1 ft.lbs.



wc_gr003734

4.9 Battery Jump Start Procedure

Occasionally, it may be necessary to jump start a weak battery. If jump starting is necessary, the following procedure is recommended to prevent starter damage, battery damage, and personal injuries.

DANGER

Jump starting a battery incorrectly can cause battery to explode, resulting in severe personal injury or death. Do not smoke or allow ignition sources near the battery, and do not jump start a frozen battery.

WARNING

Electrical arcing can cause severe personal injury. Do not allow positive and negative cable ends to touch.

4.9.1 Disconnect engine load.

4.9.2 Use a battery of the same voltage (12V) as is used with your engine.

4.9.3 Attach one end of the positive booster cable (red) to the positive (+) terminal of the booster battery. Attach the other end to the positive terminal of your engine battery.

4.9.4 Attach one end of the negative booster cable (black) to the negative (–) terminal of the booster battery. Attach other end of negative cable to a solid chassis ground on your engine.

***NOTICE*:** Jump starting in any other manner may result in damage to the battery or the electrical system.

4.9.5 Push down on the throttle foot pedal, turn the engine keyswitch and hold it until the engine starts.

***NOTICE*:** Cranking the engine for more than 5 seconds can cause starter damage. If the engine fails to start, release the keyswitch and wait 10 seconds before operating the starter again.

***NOTICE*:** When using lights or high amperage draw accessories, idle the engine for a period of 20 minutes to bring the battery to charge state.

4.10 Spark Plug

Clean or replace spark plug as needed to ensure proper operation. Refer to the engine Owner's Manual.

Note: *Refer to the Technical Data for the recommended spark plug type and the electrode gap setting*.

WARNING

The muffler and engine cylinder become very hot during operation and remain hot for a while after stopping the engine. Allow engine to cool before removing spark plug.

4.10.1 Remove spark plug and inspect it.

4.10.2 Replace plug if the insulator is cracked or chipped. Clean spark plug electrodes with a wire brush.

4.10.3 Set the electrode gap.

4.10.4 Tighten spark plug securely.

***NOTICE*:** A loose spark plug can become very hot and may cause engine damage.

4.11 Air Cleaner

See Graphic: wc_gr000154, wc_gr003765

The engine is equipped with a dual element air cleaner. Service air cleaner frequently to prevent carburetor malfunction.

***NOTICE*: NEVER** run engine without air cleaner. Severe engine damage will occur.

WARNING

NEVER use gasoline or other types of low flash point solvents for cleaning the air cleaner. A fire or explosion could result.

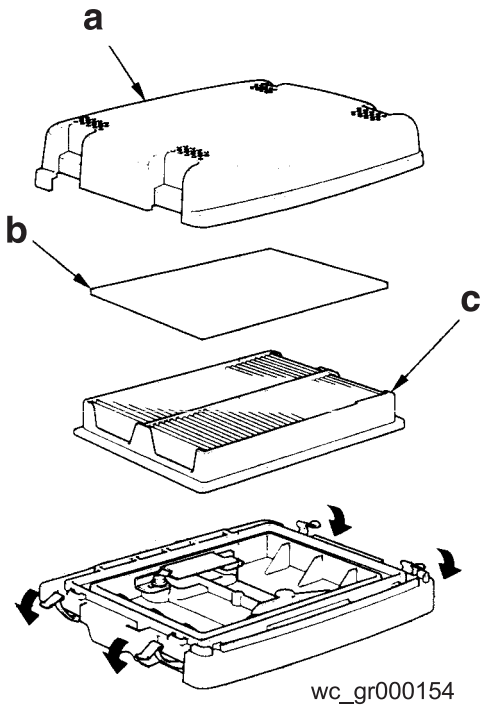
To service:

4.11.1 Remove air cleaner cover **(a)**. Remove both elements **(b, c)** and inspect them for holes or tears. Replace damaged elements.

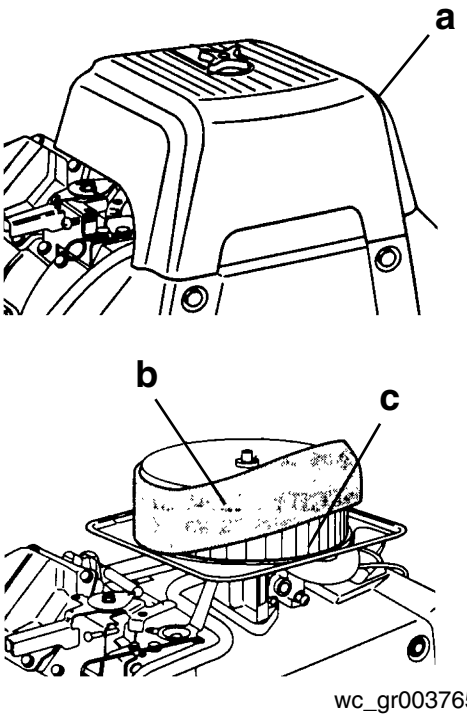
4.11.2 Wash foam element **(b)** in solution of mild detergent and warm water. Rinse thoroughly in clean water. Allow element to dry thoroughly.

Do not put oil on the foam element.

4.11.3 Tap paper element **(c)** lightly to remove excess dirt. Replace paper element if it appears heavily soiled.



wc_gr000154



wc_gr003765

4.12 Engine Oil and Filter

See Graphic: wc_gr000155

Drain oil while engine is still warm.

4.12.1 Remove oil fill cap **(a)** and drain plug **(b)** to drain oil.

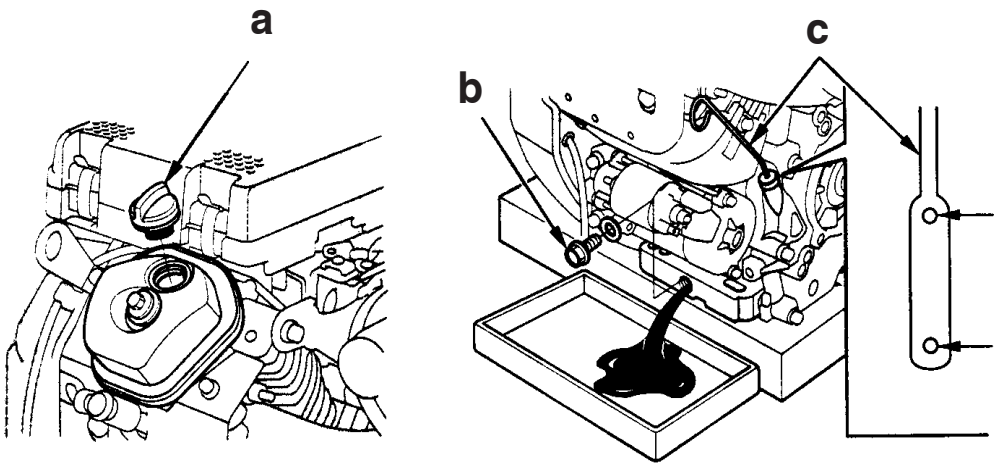
Note: *In the interests of environmental protection, place a plastic sheet and a container under the machine to collect any liquid which drains off. Dispose of this liquid in accordance with environmental protection legislation.*

4.12.2 Install drain plug and tighten.

4.12.3 Fill engine crankcase with recommended oil to the upper limit mark on the dipstick **(c)**.

4.12.4 Install oil fill cap and dipstick securely.

4.12.5 Remove front pedestal panel to access oil filter. To replace the oil filter, remove the installed oil filter after oil has been drained. Apply a thin coat of oil to the rubber gasket of the replacement oil filter. Screw the filter on until it just contacts the filter adapter, then turn it an additional 22.24 mm (7/8 in.) turn. Refill with oil as described above.



4.13 Storing the Machine

When

Follow the procedures below if the machine is to be stored for more than 30 days.

Maintaining the machine

To prepare the machine for long-term storage:

4.13.1 Drain the fuel tank and the water tank.

4.13.2 Change the engine oil.

4.13.3 Maintain the engine (see below).

4.13.4 Clean the entire trowel and engine compartment.

4.13.5 Remove dirt from the cooling fins on the engine cylinders and on the blower housing.

4.13.6 Remove the battery from the machine and charge it periodically.

4.13.7 Cover the entire machine and place it in a dry protected area.

Maintaining the engine

- If your machine has a diesel engine, consult your engine owner's manual for maintenance instructions.
- If your machine has a gasoline engine:

4.13.8 Disconnect the ignition wires from the spark plugs. Remove the spark plugs.

4.13.9 Pour approximately 30 ml (1 ounce) of SAE 30W oil into each engine cylinder through the spark plug opening.

4.13.10 Reinstall the spark plugs, but leave the ignition wires disconnected to prevent the engine from starting.

4.13.11 Crank the engine for one or two seconds to distribute the oil inside the engine cylinders.

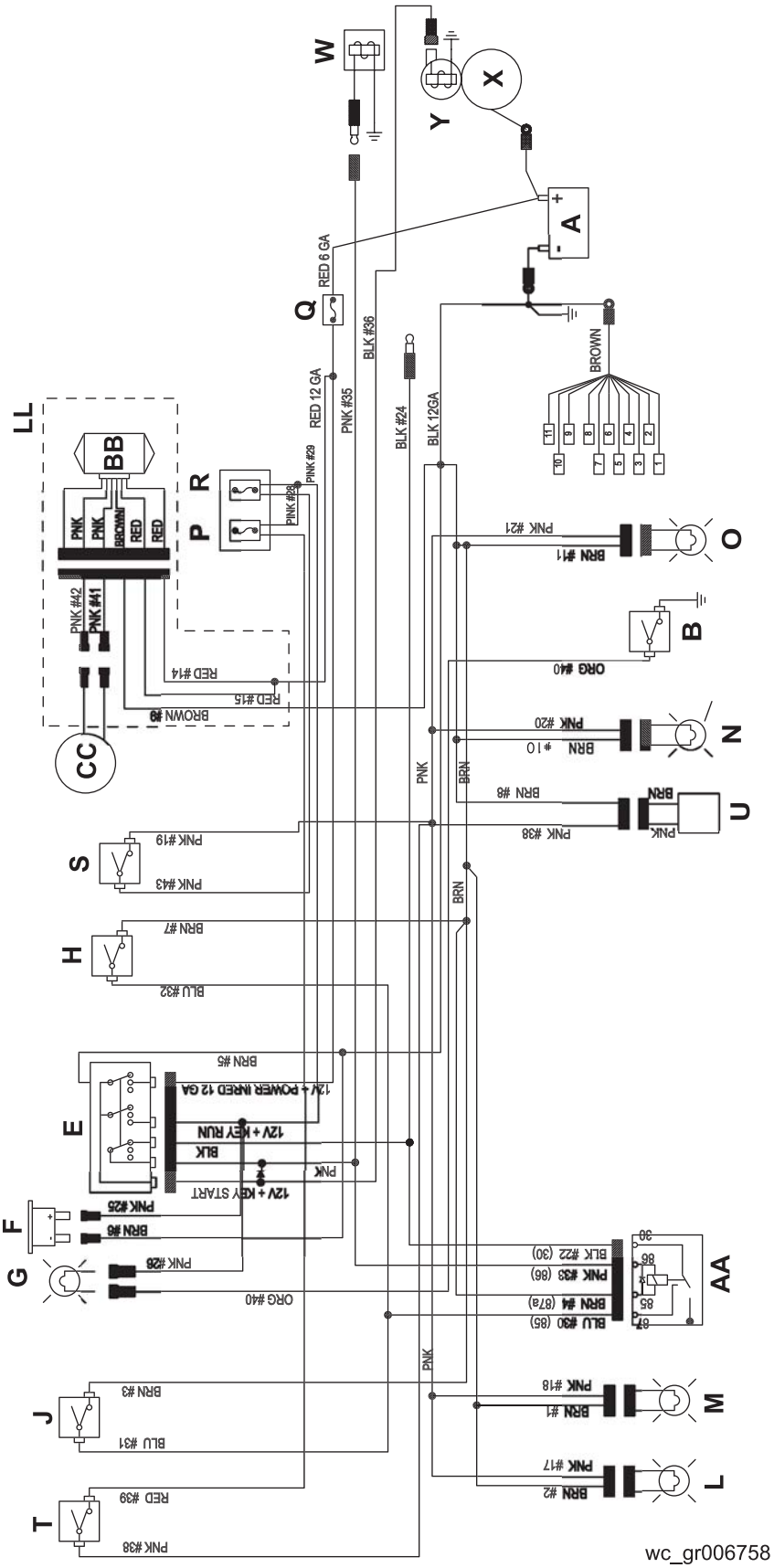
4.13.12 Reconnect the ignition wires.

4.14 Troubleshooting

Problem	Reason	Remedy
Engine does not start.	Engine problem.	Consult engine manufacturer's service manual.
Machine out of balance; wobbling excessively.	Operator is over-steering.	The movement of each gearbox is controlled by "stops" to provide the correct relationship of the control arm movement to machine movement. Excessive pressure on control arms in any direction will not increase reaction time and can damage steering controls causing machine to wobble.
	Trowel arm(s) bent.	Replace trowel arm(s).
	Trowel blade(s) bent.	Replace trowel blade(s).
	Main shaft(s) bent due to machine being dropped.	Replace main shafts(s).
Poor handling; excessive range in control lever movement.	Worn bushings due to lack of lubrication.	Replace bushings and lubricate at least every 20 hours.
	Control arm lever adjustment has moved or control arm has been bent.	Reset control arm lever.
	Lower control arm(s) bent. This can be caused by dropping machine.	Replace lower control arm(s). Use lifting brackets and/or forklift pockets provided on machine for lifting.

Problem	Reason	Remedy
Machine does not move.	Drive belt broken.	Replace drive belt.
	Vacuum between bottom of blades and surface of concrete.	Change pitch on blades to break suction.
	Key sheared in the main shaft.	Replace damaged key.
Trowel noisy.	Trowel blades have become misaligned and are contacting each other during rotation.	Replace damaged blades. Align blades so that one set represents a (+) and the other an (x) when viewed from above.
	Sheared key.	Check all keys in drive system.
	Loose clutch.	Tighten clutch.

5 Schematic


W
X
Y
A
Q
RED 6 GA
BLK #36
RED 12 GA
PNK #35
BLK #24
BLK 12GA
BROWN
LL
BB
PNK
PNK
BROWN
RED
RED
P
R
PNK #29
PNK #28
PNK #42
PNK #41
RED #14
RED #15
BROWN #9
CC
PNK #21
BRN #1
O
B
ORG #40
PNK #20
BRN #10
N
PNK
BRN
BRN #8
PNK #38
U
PNK #19
PNK #43
S
BRN #7
BLU #32
H
BRN #5
12V + POWER IN RED 12 GA
12V + KEY RUN
BLK
PNK
12V + KEY START
E
PNK #25
BRN #6
PNK #26
F
G
ORG #40
BLK #22 (30)
PNK #33 (86)
BRN #4 (87a)
BLU #30 (85)
AA
BRN #3
BLU #31
J
PNK
PNK #18
BRN #1
M
PNK #17
BRN #2
L
RED #39
PNK #38
T
wc_gr006758

5.1 Schematic Components

Ref.	Description	Ref.	Description
A	Battery	U	Spray pump motor
B	Oil pressure switch (dual circuit)	V	Engine connector
C	Fuel pump	W	Fuel cut-off solenoid
D	Fuel pump relay	X	Starter motor
E	Key switch	Y	Engine crank solenoid
F	Hour meter	Z	Glow plug fuse
G	Oil pressure indicator light	AA	Relay—safety system
H	Operator presence switch (normally open)	BB	Voltage regulator
J	Throttle sense switch (normally closed)	CC	Alternator
K	Neutral relay	DD	Glow plug temperature sensors
L	Right front light	EE	Glow plugs
M	Right rear light	FF	Keyed power fuse
N	Left rear light	GG	Temperature sensor
O	Left front light	HH	Coils—ignition
P	Fuse—spray system	JJ	Ignition module
Q	Fuse—main	KK	Engine speed sensor
R	Fuse—light circuit	LL	External voltage regulator (Honda engines only)
S	Light switch	MM	Glow plug relay
T	Spray pump switch	—	—

6 Technical Data

6.1 Engine

Engine Power Rating

Net power rating per SAE J1349. Actual power output may vary due to conditions of specific use.

Part No.		**CRT 36-24A** 0620080 0620299	**CRT 36-25** 0620115 0620295
Engine			
Engine make		Honda	Wacker Neuson
Engine model		GX670	WM720
Max. rated power @ rated speed	kW (Hp)	15.3 (20.5) @ 3850 rpm	18.6 (25) @ 3850 rpm
Displacement	cm³ (in³)	670 (41)	720 (44)
Spark plug		NGK ZGR5A DENSO J16CR-U	NGK BPR4EY
Electrode gap	mm (in.)	0.70 (0.028)	
Engine speed - operating	rpm	3850	
Engine speed - idle	rpm	1400	
Battery	V / size	12 / 340CCA	
Fuel	type	Regular unleaded gasoline	
Fuel tank capacity	l (gal.)	24.6 (6.5)	
Fuel consumption	l (qt.)/hr.	9 (9.5)	
Running time	hrs.	2.7	
Clutch	type	Variable speed	
Engine oil capacity	l (qt.)	1.1 (1.2)	1.7 (1.8)
Engine lubrication	oil grade	SAE 10W30 API CF-4, CF, SJ	

6.2 Trowel

Part No.		**CRT 36-24A** 0620080 0620299	**CRT 36-25** 0620115 0620295
Trowel			
Operating Weight	kg (lbs.)	**0620080** 376 (830) **0620299** 389 (865)	**0620115** 378 (835) **0620295** 392 (870)
Dimensions (L x W x H)	mm (in.)	2043 x 1043 x 1366 (80 x 41 x 54)	
Rotor Speed (range)	rpm	35-160	
Blade Pitch (range)	degrees	0-25	
Gearbox	type	heavy duty	
Gearbox Lubrication	type	Mobil Glygoyle 460	
	l (oz.)	1.83 (62) each	
Driveshaft	type	splined universal joint	

Operation		
Troweling Width **with pans** (non-overlapping) **without pans** (non-overlapping)	mm (in.)	 1975 (78) 1905 (75)
Troweling Area **with pans** (non-overlapping) **without pans** (non-overlapping)	m^2 (ft^2)	 1.8 (19) 1.6 (18)

6.3 Sound and Vibration Specifications

The required sound specifications, per Annex VIII, Directive 2000/14/EC of the EC-Machine Regulations, are:

-the sound pressure level at operator's location (L_{pA}): 91.2 dB(A) (CRT 36-24A), and 91.7 dB(A) (CRT 36-25).

-the guaranteed sound power level (L_{WA}): 104.7 dB(A) (CRT 36-24A) and 108.6 dB(A) (CRT 36-25)

These sound values were determined according to ISO 3744 for the sound power level (L_{WA}) and ISO 11204 for the sound pressure level (L_{pA}) at the operator's location.

The weighted effective acceleration value, determined according to ISO 5349-1and ISO 2631, is:

-for whole body: 0.215 m/s2 (CRT 36-24A) and 0.316 m/s2 (CRT 36-25).

-for hand/arm: 1.81 m/s2 (CRT 36-24A) and 1.72 m/s2 (CRT 36-25).

The sound and vibration specifications were obtained with the unit operating on fully cured, water wetted concrete at nominal engine speed.

Vibration Uncertainties

Hand-transmitted vibration was measured per ISO 5349-1. This measurement includes an uncertainty of 1.5 m/sec^2.

Whole body vibration was measured per ISO 2631-1. This measurement includes an uncertainty of 0.3 m/sec^2.

7 Emission Control Systems Information and Warranty

The Emission Control Warranty and associated information is valid only for the U.S.A., its territories, and Canada.

7.1 Emission Control System Background Information

Introduction

Wacker Neuson spark-ignited engines/equipment must conform with applicable Environmental Protection Agency (EPA) and the State of California emissions regulations. There are two types of emissions that fall under these regulations: 1) exhaust, and 2) evaporative. These regulations require that manufacturers warrant the emission control systems for defects in materials and workmanship.

Furthermore, EPA and California regulations require all manufacturers to furnish written instructions describing how to operate and maintain the engines/equipment including the emission control systems. This information is provided with all Wacker Neuson engines/equipment at the time of purchase.

Exhaust Emissions

The combustion process produces carbon monoxide, oxides of nitrogen, and hydrocarbons. Control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Wacker Neuson utilizes lean carburetor settings and other systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

Evaporative Emissions

Evaporative emissions are fuel emissions and generally include emissions that result from permeation of fuel through the fuel-system materials or from ventilation of the fuel system.

Wacker Neuson utilizes low-permeation fuel lines and fuel tanks where applicable to reduce evaporative emissions.

Problems that may affect Emissions

If any of the following symptoms arise, have the engine/equipment inspected and repaired by a Wacker Neuson dealer/service center.

- Hard starting or stalling after starting
- Rough idling
- Misfiring or backfiring under load
- Afterburning (backfiring)
- Presence of black exhaust smoke during operation
- High fuel consumption

Tampering and Altering

Tampering with or altering the emission control system may increase emissions beyond the legal limit. If evidence of tampering is found, Wacker Neuson may deny a warranty claim. Among those acts that constitute tampering are:

- Removing or altering of any part of the air intake, fuel, or exhaust systems.
- Altering or defeating the speed-adjusting mechanism causing the engine to operate outside its design parameters.

7.2 Limited Defect Warranty for Exhaust Emission Control System

See the supplied engine owner’s manual for the applicable emission warranty statement.

7.3 Limited Defect Warranty for Wacker Neuson Evaporative Emission Control Systems

The Emission Control Warranty is valid only for the U.S.A., its territories, and Canada.

Wacker Neuson Sales Americas, LLC, N92 W15000 Anthony Avenue, Menomonee Falls, WI 53051, (hereinafter “Wacker Neuson”) warrants to the initial retail purchaser and each subsequent owner, that this engine/equipment, including all parts of its evaporative emission control system, have been designed, built, and equipped to conform at the time of initial sale to all applicable evaporative emission regulations of the U.S. Environmental Protection Agency (EPA), and that the engine/equipment is free of defects in materials and workmanship which would cause this engine/equipment to fail to conform to EPA regulations during its warranty period.

Wacker Neuson is also liable for damages to other engine/equipment components caused by a failure of any warranted parts during the warranty period.

Limited Defect Warranty Period for Wacker Neuson Evaporative Emission Control Systems

The warranty period for this engine/equipment begins on the date of sale to the initial purchaser and continues for a minimum of two (2) years. For the warranty terms for your specific engine/equipment, visit wackerneuson.com.

Any implied warranties are limited to the duration of this written warranty.

What is covered

Wacker Neuson recommends the use of genuine Wacker Neuson parts, or the equivalent, whenever maintenance is performed. The use of replacement parts not equivalent to the original parts may impair the effectiveness of the engine/equipment emission controls systems. If such a replacement part is used in the repair or maintenance of the engine/equipment, assure yourself that such part is warranted by its manufacturer to be equivalent to the parts offered by Wacker Neuson in performance and durability. Furthermore, if such a replacement part is used in the repair or maintenance of the engine/equipment, and an authorized Wacker Neuson dealer/service center determines it is defective or causes a failure of a warranted part, the claim for repair of the engine/equipment may be denied. If the part in question is not related to the reason the engine/equipment requires repair, the claim will not be denied.

For the components listed in the following table, an authorized Wacker Neuson dealer/service center will, at no cost to you, make the necessary diagnosis, repair, or replacement necessary to ensure that the engine/equipment complies with the applicable EPA regulations. All defective parts replaced under this warranty become property of Wacker Neuson.

System Covered	Components
Evaporative emissions	Fuel tank (if applicable)
	Fuel tank cap (if applicable)
	Fuel line (if applicable)
	Fuel line fittings (if applicable)
	Clamps (if applicable)
	Carbon canister (if applicable)
	Purge port connector (if applicable)
Miscellaneous parts associated with the evaporative emission control system	Clamps
	Gaskets
	Mounting brackets

What is not covered

- Failures other than those resulting from defects in material or workmanship.
- Any systems or parts which are affected or damaged by owner abuse, tampering, neglect, improper maintenance, misuse, improper fueling, improper storage, accident and/or collision; the incorporation of, or any use of, add-on or modified parts, or unsuitable attachments, or the alteration of any part.
- Replacement of expendable maintenance items made in connection with required maintenance services after the item's first scheduled replacement as listed in the maintenance section of the engine/equipment operator's manual, such as spark plugs and filters.
- Incidental or consequential damages such as loss of time or the use of the engine/equipment, or any commercial loss due to the failure of the engine/equipment.
- Diagnosis and inspection charges that do not result in warranty-eligible service being performed.
- Any non-authorized replacement part, or malfunction of authorized parts due to use of-non authorized parts.

Owner's Warranty Responsibility

The engine/equipment owner, is responsible for the performance of the required maintenance listed in the Wacker Neuson engine/equipment operator's manual. Wacker Neuson recommends that all receipts covering maintenance on the engine/equipment be retained, but Wacker Neuson cannot deny warranty coverage solely for the lack of receipts or for the failure to ensure the performance of all scheduled maintenance.

Normal maintenance, replacement, or repair of emission control devices and systems may be performed by any repair establishment or individual; however, warranty repairs must be performed by an authorized Wacker Neuson dealer/service center.

The engine/equipment must be presented to an authorized Wacker Neuson dealer/service center as soon as a problem exists. Contact Wacker Neuson Product

Support Department (1-800-770-0957) or visit wackerneuson.com to find a dealer/service center in your area, or to answer questions regarding warranty rights and responsibilities.

How to Make a Claim

In the event that any emission-related part is found to be defective during the warranty period, you shall notify Wacker Neuson Product Support Department (1-800-770-0957), and you will be advised of the appropriate dealer/service center where warranty repair can be performed. All repairs qualifying under this limited warranty must be performed by an authorized Wacker Neuson dealer/service center.

You must take your Wacker Neuson engine/equipment along with proof of original purchase date, at your expense, to the authorized Wacker Neuson dealer/service center during their normal business hours.

For owners located more than 100 miles from an authorized dealer/service center (excluding the states with high-altitude areas as identified in 40 CFR Part 1068, Appendix III), Wacker Neuson will pay for pre-approved shipping costs to and from an authorized Wacker Neuson dealer/service center.

Claims for repair or adjustment found to be caused solely by defects in material or workmanship will not be denied because the engine/equipment was not properly maintained and used.

The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

EC DECLARATION OF CONFORMITY

WACKER NEUSON CORPORATION, N92W15000 ANTHONY AVENUE, MENOMONEE FALLS, WISCONSIN USA

AUTHORIZED REPRESENTATIVE IN THE EUROPEAN UNION	**Axel Häret** **WACKER NEUSON SE** **Preußenstraße 41** **80809 München**

hereby certifies that the construction equipment specified hereunder:

1. Category:
   Ride-On Trowels

2. Machine function:
   This machine is intended to be used for floating and burnishing curing concrete.

3. Type / Model
   Trowel CRT 36-24A, CRT 36-25, CRT 48-35V, CRT 48-34V, CRT 48-35L

4. Item number of equipment:
   0620801, 0620802, 0620803, 0620804, 0620805, 0620806, 0620807

5. This machinery fulfills the relevant provisions of Machinery Directive 2006/42/EC and is also produced in accordance with these standards:
   2004/108/EC
   EN 12649

18.12.09
Date

William Lahner
Vice President of Engineering

Robert Motl
Manager, Product Engineering

WACKER NEUSON CORPORATION

The original language of this EC Declaration of Conformity is American English.

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